

Encl. 1: Earlier draft as submitted in the original specification

geometry, material composition, or strain. Perturbations occur randomly along the length of the fiber. All six polarization states of the output beam from the corner cube (which becomes the input beam to the fiber) become equally affected by the birefringence perturbations. Because of the multiplicity of zig-zag paths of meridional rays and helical paths of skew rays in a fiber, all beamlets of the input beam to the fiber are randomly scattered in a manner such that they all experience the same birefringence irrespective of their initial spatial starting point on the entrance aperture of the fiber. Once a depolarized beam is launched into a fiber the beam thereafter propagates without change in the depolarized state. Thus, a depolarized beam is not affected by the birefringence in the fiber, however the temporal coherence of the beam could be affected. The temporally coherent air-beam 16 launched into the fiber in Fig. 9(a) is not adversely affected at the output 84 for a short length fiber; however, polarization mode dispersion due to birefringence in a long length of fiber could degrade the temporal-coherence of the beam by introducing a phase difference in the orthogonal field components in the polarized beamlet states that make up the depolarized beam.

[0037] In summary a standard polarization transformer is implemented by utilizing a corner cube that is irradiated with an off-axis probe beam; whereas, a depolarizer is implemented by irradiating an on-axis beam to the corner cube. In order to obtain 100% conversion efficiency in the depolarizer and the full $\pm 45^\circ$ ellipticity angle range in the transformer, the corner cube is manufactured from a glass having a refractive index substantially centered about $n_0=1.76748$. To achieve the desired output polarization state in the transformer, angular-control in orientation is required between the polarization ellipse of the input beam and the corner cube; whereas for the depolarizer, a circularly polarized input beam is required. [A condensed version of the specification and additional background information of the Stokes vectors for the invention and supporting experiments are on record in the Disclosure Document No. 543567 in the U. S. Patent and Trademark Office.] While my above description contains many specifications, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of several preferred embodiments thereof.

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Encl. 2: Replace p. 14 of the original specification